IN THE SPECIFICATION

The REMARKS section of this response discusses the specific amendments made to the specification. Appendix B contains a marked-up copy of the specification to show the changes made.

Please amend the paragraph bridging pages 1 and 2 of the specification to read as follows.

An obstacle in realizing next generation microelectronic and optoelectronic devices and optimal integration of these devices is found in lattice mismatches between different crystals of group III-V semiconductor materials. Generally, the lattice mismatch between a substrate and an epitaxial over-layer induces strains within the over-layer. This may lead to strain relaxation which can result in formation of material defects such as dislocations within the crystalline structure of the over-layer. Fig. 1 illustrates a mismatched over-layer 1 epitaxially grown over a substrate 2, the boundary between the over-layer 1 and the substrate 2 being indicated with reference numeral 4. As shown in Fig. 1, the lattice constant associated with the over-layer 1 is different from the lattice constant associated with the substrate 2, hence the term "mismatched over-layer". Strain relaxation due to lattice mismatch is accommodated by the formation of mismatch dislocations 3 within the crystal. Defects within a crystal generally degrade the performance of devices made from the crystal, because such defects can scatter movement of carriers (electrons and holes) and can act as carrier traps and/or recombination centers. It is thus useful to provide means for growing a crystal over-layer which has different lattice constant from the substrate on which the over-layer is grown, in such a fashion that strain relaxation does not occur and mismatch dislocations do not form. Fig. 2 is an example of a schematic representation of how lattice mismatch is taken by a condensed layer of group-V species, in which the structure of over-layer 1 is preserved and no mismatch dislocations are formed.